

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ROKU INC.,

Petitioner,

v.

UNIVERSAL ELECTRONICS INC.,

Patent Owner.

Case IPR2022-01289

U.S. Patent No. 9,847,083

**DECLARATION OF DARA DEL ROSARIO
IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW
OF UNITED STATES PATENT NO. 9,847,083**

1. I, Dara Del Rosario, make the following Declaration pursuant to 28 U.S.C. § 1746: I am an IP Paralegal at the law firm of Ropes & Gray LLP.

2. I provide this Declaration in connection with the above-identified *Inter Partes* Review proceeding that is before the United States Patent and Trademark Office (“USPTO”). Unless otherwise stated, the facts stated in this Declaration are based on my personal knowledge.

3. EX1001 is a true and correct copy of U.S. Patent No. 9,847,083 (“’083”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

4. EX1002 is a true and correct copy of File History of U.S. Application No. 13/298,629, which led to U.S. Patent No. 9,847,083, which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

5. EX1004 is a true and correct copy of U.S. Patent No. 8,995,981 (“Aginsky”), which was obtained from the USPTO’s Public Patent Application

Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

6. EX1005 is a true and correct copy of U.S. Patent No. 6,839,670 (“Stammler”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

7. EX1006 is a true and correct copy of U.S. Patent Application Publication No. US 2012/0271639 A1 (“Hanson”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

8. EX1007 is a true and correct copy of U.S. Patent Application Publication No. US 2003/0103088 A1 (“Dresti”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers

on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

9. EX1008 is a true and correct copy of U.S. Provisional Patent Application No. 61/422,537 (“Aginsky Provisional”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

10. EX1010 is a true and correct copy of Roberto Pieraccini, *From AUDREY to Siri. Is speech recognition a solved problem?* (presentation), International Science Institute at Berkeley (archived Jun. 26, 2013) (accessed Apr. 6, 2022), available at <https://web.archive.org/web/20130626012955/https://www1.icsi.berkeley.edu/pubs/speech/audreytosiri12.pdf>, which was obtained at my direction. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

11. EX1011 is a true and correct copy of *Pioneering Speech Recognition*, IBM (accessed Apr. 6, 2022), available at <https://www.ibm.com/ibm/history/ibm100/us/en/icons/speechreco/transform/>, which was obtained at my direction. This document has been marked with an

exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

12. EX1012 is a true and correct copy of B.H. Juang & Lawrence R. Rabiner, *Automatic Speech Recognition – A Brief History of the Technology Development* (archived May 27, 2016) (accessed Apr. 6, 2022), available at https://web.archive.org/web/20160527115003/https://web.ece.ucsb.edu/Faculty/Rabiner/ece259/Reprints/354_LALI-ASRHistory-final-10-8.pdf, which was purchased from the publisher. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

13. EX1013 is a true and correct copy of *History of Speech & Voice Recognition and Transcription Software*, Dragon Naturally Speaking (archived Mar. 19, 2005) (accessed Apr. 6, 2022), available at https://web.archive.org/web/20050319025603/http://www.dragon-medical-transcription.com/history_speech_recognition.html, which was obtained at my direction. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. A screen shot from the Internet Archives has been added as a cover page. However, no alterations, other than these noted markings, have been made to this document.

14. EX1014 is a true and correct copy of excerpts from the *Handbook of Natural Language Processing*. Specifically, EX1014 excerpts chapter 15: Huang & Deng, *An Overview of Modern Speech Recognition*, which was copied and obtained from the Library of Congress. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. Only exemplary excerpts from the document have been included. However, no alterations, other than these noted markings, have been made to this document.

15. EX1016 is a true and correct copy of *Lecture 12: An Overview of Speech Recognition*, available at <https://web.archive.org/web/20210423171339/https://www.cs.rochester.edu/u/james/CSC248/Lec12.pdf>, which was obtained at my direction. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. A screen shot from the Internet Archives has been added as a cover page. However, no alterations, other than these noted markings, have been made to this document.

16. EX1017 is a true and correct copy of Scanlon et al., *Using Broad Phonetic Group Experts for Improved Speech Recognition*, IEEE TRANSACTIONS ON AUDIO SPEECH & LANGUAGE PROCESSING (Mar. 2007), available at <https://academiccommons.columbia.edu/doi/10.7916/D84F219Z/download>, which was obtained at my direction. This document has been marked with an exhibit

label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

17. EX1018 is a true and correct copy of Latanya Sweeney & Patrick Thompson, *Speech Perception Using Real-Time Phoneme Detection: The BeBe System* (1997), available at <https://dataprivacylab.org/projects/bebe/paper.pdf>, which was obtained at my direction. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

18. EX1019 is a true and correct copy of Cheng et al., *Voice-to-Phoneme Conversion Algorithms for Voice-Tag Applications in Embedded Platforms*, EUIRASIP J. ON AUDIO SPEECH & MUSIC PROCESSING (2008), available at <https://asmp-urasipjournals.springeropen.com/articles/10.1155/2008/568737>, which was obtained at my direction. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

19. EX1020 is a true and correct copy of U.S. Patent Application Publication No. 2008/0059193 (“Huang-193”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers

on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

20. EX1021 is a true and correct copy of U.S. Patent No. 6,584,439 (“Geilhufe”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

21. EX1022 is a true and correct copy of U.S. Patent No. 7,689,417 (“Huang-417”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

22. EX1023 is a true and correct copy of U.S. Patent No. 7,944,370 (“Harris”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

23. EX1024 is a true and correct copy of U.S. Patent No. 5,247,580 (“Kimura”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

24. EX1025 is a true and correct copy of International Patent Publication No. WO2008096944 (“Lee”), which was obtained at my direction. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

25. EX1026 is a true and correct copy of U.S. Patent No. 6,397,186 (“Bush”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

26. EX1027 is a true and correct copy of U.S. Patent Application Publication No. 2006/0235701 (“Cane”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This

document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

27. EX1028 is a true and correct copy of U.S. Patent Application Publication No. US 2006/0041655 (“Holloway”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

28. EX1029 is a true and correct copy of U.S. Patent Application Publication No. US 2009/0254778 (“Huang-778”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

29. EX1030 is a true and correct copy of U.S. Patent Application Publication No. US 2005/0216606 (“Hayes”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers

on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

30. EX1031 is a true and correct copy of European Patent No. 1,209,661 (“Hayes-661”), which was obtained from the European Patent Office Espacenet system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

31. EX1032 is a true and correct copy of U.S. Patent No. 6,748,361 (“Comerford”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

32. EX1033 is a true and correct copy of U.S. Patent Application Publication No. 2002/0095286 (“Ross”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

33. EX1034 is a true and correct copy of U.S. Patent Application Publication No. 2008/0133244 (“Bodin”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

34. EX1035 is a true and correct copy of U.S. Patent Application Publication No. US 2007/0052549 (“Le”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

35. EX1036 is a true and correct copy of U.S. Patent No. 7,259,710 (“Kisliakov”), which was obtained from the USPTO’s Public Patent Application Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

36. EX1037 is a true and correct copy of U.S. Patent No. 7,046,161 (“Hayes-161”), which was obtained from the USPTO’s Public Patent Application

Information Retrieval (“Public PAIR”) system. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. However, no alterations, other than these noted markings, have been made to this document.

37. EX1038 is a true and correct copy of excerpts of GROTH ET AL., NETWORK+ STUDY GUIDE DELUXE EDITION (2d ed. 2005), which was obtained from the Library of Congress. This document has been marked with an exhibit label and page numbers on each page at the bottom right corner. Only exemplary excerpts from the document have been included. However, no alterations, other than these noted markings, have been made to this document.

38. Certain pages have been resized to 8.5 x 11 inches. No content was removed by this resizing.

39. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001. If called to testify as to the truth of the matters stated herein, I could and would testify competently.

40. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 20th day of July, 2022, in Woodbridge, Virginia.

/Dara Del Rosario/
Dara Del Rosario
ROPES & GRAY LLP